

REMARKS

I. The 35 U.S.C. §103 Rejections

Claims 133-134, 136-140, 142-146, 148-152, and 154-156 were rejected under 35 U.S.C. §103(a) as being unpatentable over Karasawa et al., U.S. Patent No. 5,200,843 ("KARASAWA") in view of Konno, U.S. Patent No. 4,497,015 ("KONNO").

The Examiner relied on KONNO for rejecting certain limitations in element [a] of independent claims 133, 139, 145 and 151 and relied primarily on Figure 1 of KARASAWA for all other elements.

The Examiner acknowledged that Figure 1 of KARASAWA does not disclose or suggest combining more than two separated electromagnetic energy beams without previously subcombining the beams as recited by the independent claims (i.e., claims 133, 139, 145, & 151). The Examiner alleged that it is obvious to a person skilled in the art to replace the reflectors 6, 10 & 11 in Figure 1 of KARASAWA with the single light reflector 46 in Figure 13 of KARASAWA. Applicant respectfully disagrees and submits that the Examiner has failed to establish a prima facie case of obviousness for combining the "prior art embodiment" of Figure 13 with Figure 1 of KARASAWA.

A. There Is No Motivation to Combine Figures 1 and 13 of KARASAWA

"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination." MPEP 2143.01. "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." Id.

An explicit object of KARASAWA is to "provide a projection type LCD system which is able to produce a high intensity picture image" KARASAWA,

col. 2, lines 33-35. One improvement proposed in KARASAWA for achieving this object is to reduce intensity variations resulting from unequal light path distances between the source light and the LCD panels.

Any intensity variation between the respective identical polarization oriented components is substantially equalized by substantially the distances to the liquid crystal light valve from the separated P- and S-polarized light components, which is realized by using a wedge type light reflector. KARASAWA, col. 3, lines 57-62.

In both of these embodiments, the light path length[s] from polarizing beam splitter 2 to liquid crystal light valve 8 are substantially equal for both polarized light components ... provides for substantially equal as well as the shortest light path length relative to both of the oriented polarized light components. KARASAWA, col. 8, lines 20-27 (emphasis added).

Therefore, the wedge type light reflector is effectively utilized to accomplish a highly bright, uninterrupted and uniformly projected picture image with reduced unevenness in beam intensity. KARASAWA, col. 8, lines 45-49.

Figure 1 of KARASAWA appears to achieve the object discussed above. That is, the LCD panels are placed so that the three light paths between the source light and the three panels are substantially equal. As a result of the LCD panel positions, separate reflectors 6, 10 & 11 have to be used and are placed as illustrated to combine the light beams exiting the LCD panels.

In contrast, Figure 13 (labeled Prior Art in KARASAWA) discloses a projection system in which the three light paths between the source light and the three

LCD panels are unequal in lengths. This may be a result of the need to place the LCD panels parallel to different sides of the single light reflector 46 in order to effectively combine the light beams exiting the LCD panels with the single reflector 46.

KARASAWA does not suggest any desirability of replacing the reflectors 6, 10 & 11 in Figure 1 with the reflector 46 in Figure 13. In fact, the proposed modification would render the KARASAWA invention (if modified) unsatisfactory for its intended purpose (i.e., to provide “highly bright, uninterrupted and uniformly projected picture image with reduced unevenness in beam intensity”). Based on the foregoing, there cannot be any suggestion or motivation to make the proposed modification.

B. Figure 1 of KARASAWA Teaches Away from Figure 13 of KARASAWA

Further, Figure 1 of KARASAWA teaches away from the prior art embodiment of Figure 13 of KARASAWA.

“It is improper to combine references where the references teach away from their combination.” MPEP 2145.

Figure 1 of KARASAWA discloses a projector configuration in which the three light paths between the source light to the three LCD panels are substantially equal in length. This configuration achieves one of the objects of the KARASAWA invention (i.e., to reduce variations in intensity). In contrast, the (prior art) projector configuration in Figure 13 of KARASAWA discloses unequal light paths between the source light and the three LCD panels. Thus, according to KARASAWA, Figure 1 is an improvement over Figure 13 in that at least the light reflector 46 of Figure 13 should be replaced by reflectors 6, 10 & 11. Thus, KARASAWA expressly teaches away from replacing reflectors 6, 10 & 11 in Figure 1 with the light reflector 46 of Figure 13.


Based on all the foregoing, Applicant respectfully submits that the combination suggested by the Examiner is improper and that the Examiner has failed to present a prima facie case of obviousness.

II. Conclusion

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance. Should the Examiner believe that a telephone interview would help advance the prosecution of this case, the Examiner is requested to contact the undersigned attorney.

Respectfully submitted,

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